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February 11, 1988

Ms. Janet Feldstein
SCP - Carlstadt Project Officer
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
26 Federal Plaza
New York, New York 10278

Re: Revision No. 7
Project Operations Plan
SCP Site Remedial Investigation
Carlstadt, New Jersey

Dear Ms. Feldstein:

The following revisions to the March 4, 1987 Project Operations Plan (POP) are based on our meeting of February 5, 1988.

A. Section 7.6: Add Seismic Profiling in accordance with this section, except as follows:

1. Paragraph 7.6.1, Objective: The objective of the seismic profiling is to provide stratigraphic data for use in planning the location of off-site wells in till aquifer above the bedrock. Based on an evaluation of the three borings to bedrock on site and regional geologic information, it is possible that presently undetected bedrock surface features (such as ridges) may exist beneath the site which could locally alter the inferred northwestern flow direction of ground water in the till aquifer. The refraction survey will be used to map the bedrock surfaces along four profile lines so that any large-scale bedrock features beneath the site may be observed. Flow directions within the till aquifer will be re-evaluated with respect to bedrock topography. Off-site well locations can then be selected upgradient and downgradient of the site with a higher degree of confidence.

2. Paragraph 7.6.5.3, Seismic Profiling: The profiling will be performed using seismic refraction techniques. Four profile lines will be deployed as shown on Figure 7-6. Geophones will be placed at regularly-spaced intervals along the profile lines and a 150-pound weight falling on a 2-foot square steel plate will be used as an energy source. Each profile line will be shot in both directions. Lines crossing the site will be tied into the existing deep borings.

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3. **Paragraph 7.6.9, Schedule**: The field work is expected to take one week to complete. Data reduction, evaluation and interpretation is expected to require two weeks. The results of the seismic profiling (raw data, contours, interpretations) will be submitted to the EPA as soon as they become available. At that point, the location of off-site till wells can be jointly selected with the EPA.

B. **Section 7.7: Add Supplemental Piezometers** in accordance with this section except as follows:

1. **Paragraph 7.7.1, Objective:** The objective of installing additional piezometers is to obtain supplemental water level data on the ground water flow regime of the upper saturated zone. The data will be used in conjunction with water level data from existing shallow wells and piezometers to provide a basis for the location of off-site wells in the shallow aquifer. Existing piezometric data from the shallow aquifer indicate that sewer line installation trenches adjacent to the site and buried mosquito control trenches within the site may be controlling, to some degree, ground water flow directions in the shallow aquifer. Several rounds of water level data will be collected from all site wells and piezometers (including the additional piezometers) and evaluated. Off-site well locations in the shallow aquifer will be based on these evaluations, in conjunction with discussions with the EPA. The additional piezometer locations are shown on Figure 7-7.

2. **Paragraph 7.7.5.2, Cleaning**: No soil or water samples will be collected from these piezometer borings, and therefore no cleaning is planned until completion of the program. Piezometers will be installed in the order of least suspected level of contamination to higher, as determined by existing site chemical data. Steam cleaning will be done at the conclusion of the drilling program at the on-site decontamination area.

3. **Paragraph 7.7.5.4, Shallow Piezometer Installation**: If ground water is encountered at shallow depth (less than three feet), the sand pack and bentonite seal can be varied to the minimum dimensions given in POP Revision No. 2.

4. **Paragraph 7.7.5.5, Sampling and Logging**: No samples will be collected for laboratory analysis. Head space scans will not be performed. Sampling equipment will be cleaned only at the completion of the drilling program, using steam cleaning.

5. **Paragraph 7.7.7, Field Investigation Team:** The On-Site Coordinator will also serve as the Field Geologist/Engineer.

6. **Paragraph 7.7.8, Schedule:** It is estimated that one week will be required for installation of the piezometers. Water level measurements will made over an eight to twelve week period following piezometer installation. Frequency of measurements will initially be weekly; depending on the data from the first two sets of measurements, the frequency may be extended to every two weeks. At the end of eight weeks, the data trends will be evaluated (in conjunction with the EPA) to determine if the program should be extended. At the completion of the evaluation phase, the location of off-site shallow wells can be jointly selected with the EPA.

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To complete our documentation of the revisions, we request that the revisions be approved by the EPA in writing.

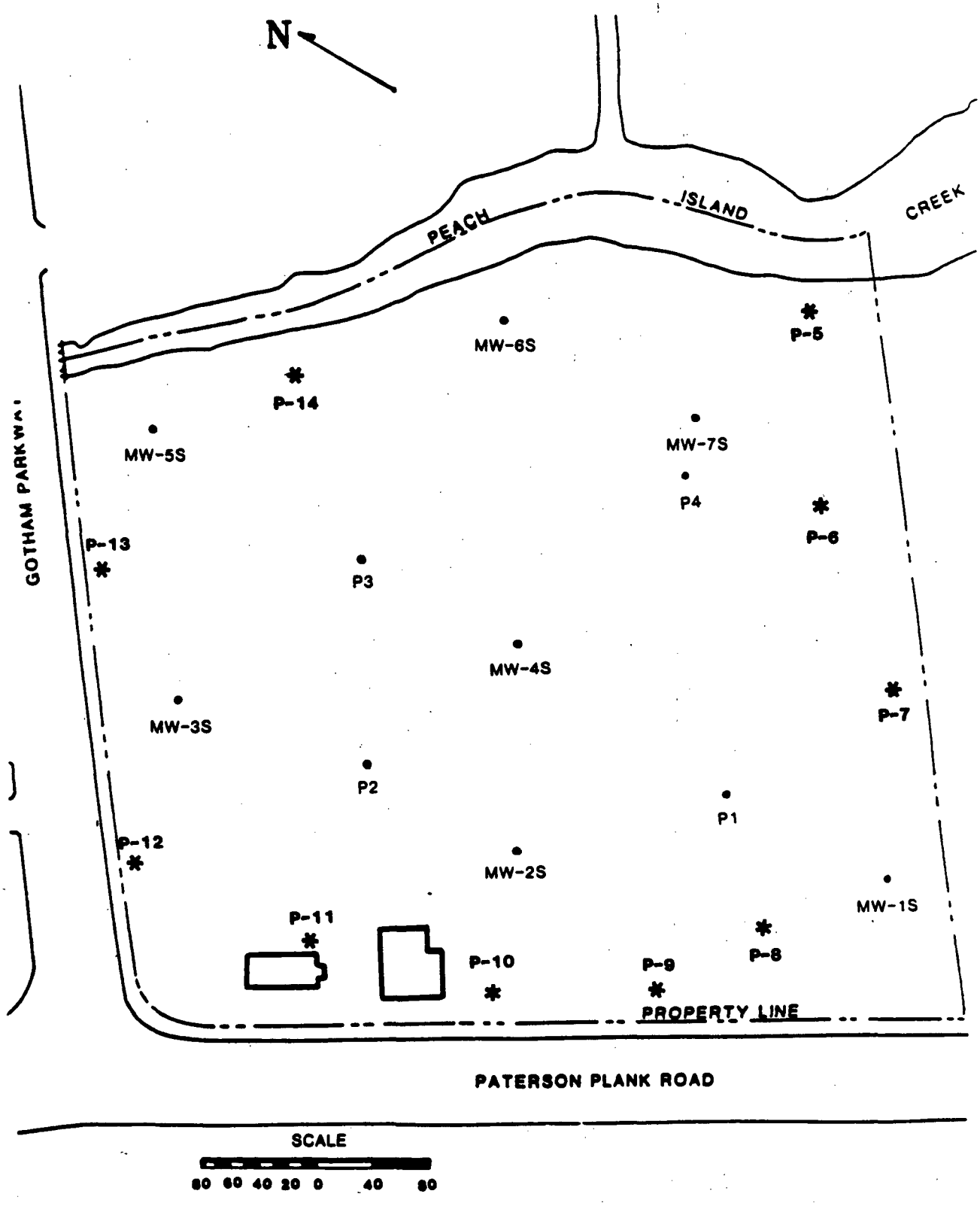
Very truly yours,

DAMES & MOORE

Gerard M. Coscia, P.E.
Project Manager

GMC/jhm

cc: M. Reiser
T. Armstrong
L. DeStefano
J. Koczan



PROPOSED ADDITIONAL PIEZOMETER LOCATIONS SCP CARLSTADT

KEY

* Proposed additional piezometer
• Existing shallow wells and piezometers

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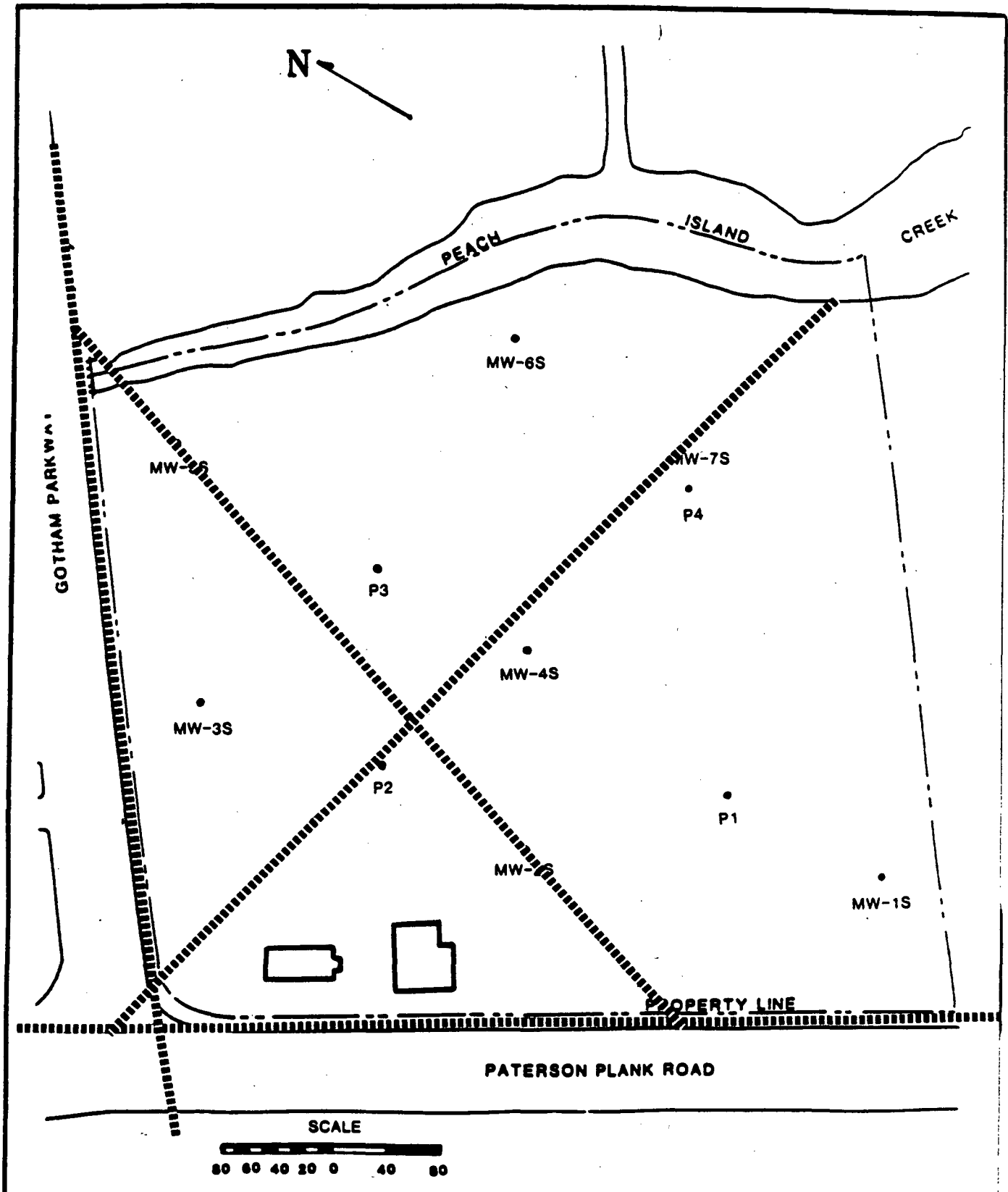
FIGURE 7-7

Y40.7 (REV. 6-01)



PROPOSED SEISMIC LINE LOCATIONS
SCP CARLSTADT

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KEY

Proposed seismic line

• Existing wells and piezometers

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FIGURE 7-6